on the shelves of people who concern themselves about tree-cultivation and general nursery-work. It has a considerable value, too, as a contribution to Scientific Botany, for its author has had long experience, with very favourable opportunities, in connection with everything woody,* hardy enough to bear exposure in the open air in Prussia. He is a good botanist and an enthusiast in his speciality, so that his book includes much useful information, especially of that kind, too seldom put on record, possessed by workers in the open air, or so scattered through periodical botanical and gardening literature, as to be hardly available at a pinch. To English botanists and nursery-folk it offers many interesting features. One amongst many others is the opportunity it affords of comparing the climatic differences between Britain and Central Europe, as deducible from the copious data which the "Dendrology" gives relating to the capacity of the various species to resist the severity of continental winters.

Here is an example of the author's plan of treatment. We take the common Aucuba, or so-called "variegated laurel," of every English shrubbery. *Aukuba*, not *Aucuba* Prof. Koch says it must stand :—

> *A. Japonica*, Thunb. Fl. Japon. 64, tab. 11 and 13 (1784).
>
> THE JAPANESE AUKUBA.
>
> Japan.
> Flowers in May and June.
>
> Leaves varying in form, mostly elliptical or elongate-lanceolate, usually sharply toothed above the lower third, glabrous: inflorescence with appressed hairs; petals ovate-lanceolate, dark brown-red; berries coral-red.
>
> One of the most beautiful of evergreen shrubs, unfortunately scarcely hardy in north-eastern Germany, even when protected in winter, though thriving in the open air in France and Rhine-land. In England it is a prime favourite.

Then follows a general account of the habit of the plant.

> Until quite recently we have had only the bright-yellow-spotted female shrub in our gardens, but since Von Siebold and Fortune have introduced the unspotted male plant, and a number of new forms, *Aukuba japonica* promises to compete with the Holly in variety. In the last catalogue (1867) of the Siebold-Garden, Witte has published no fewer than twenty-four forms as already in the trade.

Here are enumerated some of the more important of these, arranged according (1) to form of leaf, (2) kind or mode of variegation, and (3) toothing of the leaf-margin.

Altogether more than a page is devoted to this *Aucuba*. To its less-known Himalayan congener, *A. himalaica*, about half as much. The common Barberry extends over nearly five pages, but it is an extreme case of a variable and much-cultivated plant.

Throughout the plan is pretty much the same as is followed in *Aucuba*. After the name follows synonymy so far as may be needed; then frequently some explanation of the origin of the name, whether generic or specific, often including a biographical paragraph in the case of plants commemorating some person. Then follows the geographical distribution of the species. Here we may remark, what this book is especially apt to recall, the curious fact familiar to every botanist, how many well-known species of tree and shrub, even such as are not likely to have undergone material modification under culture, are of doubtful origin,—the horse-chestnut and walnut for example. Persia and the Central Asiatic plateau generally are credited with these trees, and probably the guess is in the right direction, though no wild specimens exist of either species in our herbaria.

There are some things we cannot agree with in the book, of course. For example, we should not undo *Cratægus*, and make all our thorns into medlars (*Mespilus*); nor do we consider the reasons given suffice to justify a renaming of our common lime-trees (*Tilia*); but these are matters too technical for discussion here, and after all of subordinate importance.

The first volume only, including the Polypetalous Natural Orders, is as yet published. Just at present German gardens are left pretty much to take care of themselves, and we fear there is no chance of the second volume until we have this miserable war settled. D. OLIVER

## *OUR BOOK SHELF*

*Travels of a Naturalist in Japan and Manchuria.* By Arthur Adams, F.L.S., Staff-Surgeon R.N. (London: Hurst and Blackett, 1870.)

THOSE who wish to see what a world of pleasure may be opened up to one by an adequate knowledge of some department of Natural Science, ought to read this book. Mr. Adams is an enthusiastic naturalist, with a special "weakness," as he terms it, for insects, and the delight he has experienced in the hunt for specimens, and the close observation of his favourites in different parts of the world, have been simply endless. We should hope that some of his readers will find his eagerness "catching," and be led to feel new interest in objects which they have hitherto regarded with indifference, or perhaps treated as a nuisance. Among other animals observed by Mr. Adams with more or less care, was one of two specimens of the scaly ant-eater (*Manis Javanica*)—a female—which came under his notice. During the day she remained coiled up in a ball, but grew lively as night approached. In walking "she trod gingerly on the bent under-claws of her fore-feet, and more firmly on the palms of her hind-feet." One of her favourite attitudes was that of her gigantic extinct analogue, the Mylodon, as seen in the model of Waterhouse Hawkins in the gardens of the Crystal Palace. Supported on her hind limbs and "the firm, flattened, powerful, muscular tail," she would raise her fore-feet, moving her head and body from side to side, and peering cautiously about with her "little round prominent eyes." On the least alarm she tucked in her head between her fore legs. On one occasion she was coiled up in a strong net and supposed to be properly secured; when night approached, however, she easily burst her trammels, and was discovered by the violent barking of a little dog who was puzzled and alarmed by the apparition of so strange a visitor. Both specimens were fed on raw eggs and chopped raw beef, and seemed to thrive. Besides observations of this sort, Mr. Adams's readers will find scattered throughout his work some pleasant sketches of natural scenery, a few descriptions of amusing personal adventures, and occasional glimpses into the different customs of the countries he has visited.

*Echinides du Départemente de la Sarthe considérés au point de Vue zoologique et stratigraphique.* Par MM. Cotteau et Triger. Avec 65 planches de fossiles, dessinées et lithographiées d'après nature par MM. Levasseur et Humbert, 10 planches de coupes géologiques, et 2 tableaux. Williams and Norgate, 1855—1869.)

NOTHING can afford better evidence of the zeal and assiduity with which palæontology is now pursued than the fact mentioned by M. Cotteau in the preface to this work, that whereas MM. Agassiz and Desor, in their

---

* Down indeed to *Alyssum saxatile* and *Iberis saxatilis*.

Catalogue raisonné of 1845, indicated the number of Echinidæ discovered in the department of Sarthe at forty-one, and D'Orbigny in his Prodrome Stratigraphique at forty-four, the result of the joint labours of the authors, and other naturalists of the district, has raised the number to no less than two hundred and two. The discrimination, description, and illustration of the different species have been performed by M. Cotteau, whilst their stratigraphical arrangement and position have been accomplished by M. Triger. Some of the more remarkable forms discovered by them are the large *Heterocidaris trigeri*, with its peculiar arrangement of tubercles and its singular ambulacral pores, a species of which has recently been obtained by Mr. Wright from the inferior oolite of Yorkshire; the *Metaporhinus sarthacensis*, a curious and exceptional form representing in the Jurassic series the great family of *Spatangidæ*, which only make their appearance at the commencement of the cretaceous period; the *Echinocyphus tenui striatus*, which the authors are inclined to regard as the type of a new genus; the *Cidaris vendocinensis*, which presents such beauty of form and markings, with many others we have no space to particularise. The lithographic drawings are clearly drawn, and comprehend all the species discovered.

*Progress of Chemistry. Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften.* Unter Mitwirkung von Th. Engelbach, Al. Naumann, W. Städel; herausgegeben von A. Strecker. Für 1868. 2tes Heft. (Williams and Norgate, 1870.)

THIS part, like the first, which we noticed a short time since, contains 480 pages; Organic Chemistry, continued from the first part, occupies 354, 13 of which are devoted to Animal Chemistry. Analysis fills 71 pages, the remainder being set apart for Technical Chemistry.

The section on Organic Chemistry contains accounts of Perkin's investigations on the hydrides of sodium and benzyl-salicyl, on butyric coumarin, and butyrocumaric acid, as well as Fittig's criticism of Perkin's views of the constitution of coumarin, which has since given rise to a lively discussion. Notices of Schützenberger's researches on triacetiodol, and of those of Perkin and Duppa on the constitution of glyoxylic acid are given. Stenhouse's experiments on benzol sulphuric acid are described, besides several papers by different chemists on the sulpho acids of the benzol series. Hofmann contributes, as usual, several valuable papers, the most important being those on the cyanide of naphthyl and its derivatives, and on the artificial mustard oils containing the radicals ethyl, methyl, amyl, tolyl, and benzyl, in the place of the allyl existing in the natural essence. The constitution of these compounds is also discussed. Gautier's researches on the carbylamines are continued, and also those of Lossen on hydroxylamine, which are noticed at considerable length. The action on organic bases is concluded by an account of Crum Brown and Fraser's experiments on the physiological effects of the compounds produced by the union of methylic iodide with the poisonous alkaloids.

Under Analysis we find the methods proposed by Frankland and Armstrong for the examination of potable waters, and which have since given rise to some controversy. Russell's apparatus for gas analysis is also described. The section on technical chemistry (only a portion of which appears in this part), contains papers by Rosenstiehl and Kopp, and by Schaffner on the preparation of sulphur from alkali waste, a subject of much importance, especially in this country, where the heaps of residues, which usually evolve sulphuretted hydrogen, and often pollute rivers in their neighbourhood, accumulate in immense quantities; this material, thanks to the study of scientific chemistry, may now be made to yield pure sulphur to such an extent as to make it worth the while of the manufacturer to extract it, while its removal renders the residues innocuous.

## *LETTERS TO THE EDITOR*

[*The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.*]

### The Gulf-Stream

I SEND for the perusal of your readers an extract from a note sent to me by Mr. King Groom of Stornoway. The facts he mentioned may be interesting. The beans I have received. When I was in the Hebrides some time since, I was assured that clubs, paddles, and drinking vessels of wood were sometimes found on the shores of the islands, and that these things were supposed to float in the Gulf-Stream from Mexico, but I never saw any. Some of your readers will doubtless be able to say where these beans grow, and to give their opinion as to the probability of their floating from the Mexican Coast, or from some other tropical country or island whose shores are washed by the Gulf-Stream. If these beans are brought over by the Gulf-Stream, it is probable that they may also be found on the west coast of Ireland and on the coasts of Devon and Cornwall. If so it would be interesting to hear from your correspondents in those parts whether any particular virtue is attributed to them by the inhabitants.

Board of Trade, Aug. 25. THOMAS GRAY

"Upon travelling on the shore of Illery I found a, to me, curious bean, known as '*dolichos mens*,' or horse-eye bean. I was told that every year a few are found along the shores of the Outer Hebrides, and they are supposed to be carried by the Gulf-Stream from the Gulf of Mexico. These beans are much sought after, as they are superstitiously supposed by the South Uist and Barra people to be a charm in child-bearing; if at that time the woman has one in her hand she will have little pain in her labour. I was much interested in the story as told me by a Mr. Arbuckle, at Barra, the parish schoolmaster, and confirmed by Dr. M'Donald of North Uist. It is said the curious have a small band of silver wire placed round the bean that has travelled so far of itself, and a silver cross put on the side by a silversmith in the south. The inhabitants state they are sure the bean is brought to the shore of the Gulf-Stream from Mexico, as they have been thus found from time immemorial. Another bean is also brought by the same means—viz., 'Eig autea Mi: Mosa,' a large brown seed."

### The British Medical Association

THE reference to the income and expenditure of the British Medical Association last week requires correction. The income of the association, from subscription, is not 5,000*l.* but 3,471*l.*; the subscription annually only one guinea. The association is one which includes an important political and social organisation. For the annual guinea the associates are enabled not only to supply themselves with a journal weekly, which stands on the same footing as those published at a higher price than their total annual subscription, but in addition they keep also an active and important organisation, with branches in every part of the kingdom, which protects medical and public interests and advances medical science. Many think with you that it would be desirable to make larger grants for special researches. But for this purpose it would be necessary to start a special fund. The annual mass of scientific matter published in the journal is treble what could be contained in any volume of Transactions, and has the advantage of being published at the opportune moments of discussion. You would confer a benefit by urging the propriety of a special fund for original research. But the members are so well pleased with the large return for their annual guinea, that their numbers have risen in four years from two to four thousand; and the weekly journal, which now takes the lead in periodical medical literature, is the essential condition of the political and professional authority of the association. To publish in its place an annual volume of Transactions would, it is universally felt, be a suicidal act of retrogression. Among the 4,000 members there are not a dozen who are not aware of this. X.

### The Intended Engineering College

"Look not a gift horse in the mouth"

I WAS very sorry to see in NATURE for 18th August a letter from Mr. G. C. Foster complaining of a supposed intention of the Government to aid the teaching of science, and basing this